CLAIMS:

1. A method of monitoring a temperature condition, comprising:

inputting a light pulse into a fiber optic cable;

receiving a reflection signal that arises from said input light pulse in said fiber optic

cable; and

determining a temperature condition along the fiber optic cable and a location of the

temperature condition along the fiber optic cable based on said reflection signal.

2. The method of claim 1, wherein said determining comprises determining said

temperature condition and location based on an amplitude and return time of said return

signal.

3. The method of claim 1, wherein said determining comprises determining said

temperature condition based on at least one of a threshold value and a comparison signal.

4. The method of claim 3, further comprising adjusting at least one of said threshold

value and comparison signal to detect different temperature conditions in said fiber optic

cable.

5. The method of claim 1, further comprising determining different portions of the

fiber optic cable based on different return times of said reflection signal.

6. The method of claim 5, further comprising determining said temperature condition

in each of said different portions of the fiber optic cable based on at least one of a threshold

value and comparison signal corresponding to each of said different portions of the fiber optic

cable.

7. The method of claim 6, further comprising adjusting each of said corresponding at

least one of said threshold value and comparison signal to detect different temperature

conditions among said different portions of the fiber optic cable.

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8. The method of claim 1, further comprising determining said location by determining at least one of a location relative to an overall length of the fiber optic cable, and an absolute distance from one end of the fiber optic cable.

9. The method of claim 1, further comprising determining at least one of a

5 temperature duration and a temperature progression of said temperature condition over a predetermined time interval.

10. The method of claim 1, further comprising generating a signal to initiate at least one of an alarm, a safety measure and a corrective measure.

11. The method of claim 1, further comprising:

10 correlating said location of the temperature condition along said fiber optic cable with a spatial location of an area occupied by said fiber optic cable; and

displaying on a display the spatial location of the area occupied by said fiber optic cable.

12. A method of monitoring a temperature condition, comprising:

15 step for inputting a light pulse into a fiber optic cable;   ∿

step for receiving a reflection signal that arises from said input light pulse in said fiber optic cable; and

step for determining a temperature condition along the fiber optic cable and a location of the temperature condition along the fiber optic cable based on said reflection signal.

20 13. The method of claim 12, wherein said step for determining comprises determining said temperature condition and location based on an amplitude and return time of said return signal.

14. The method of claim 12, wherein said step for determining comprises determining said temperature condition based on at least one of a threshold value and a comparison signal.

15. The method of claim 14, further comprising step for adjusting at least one of said threshold value and comparison signal to detect different temperature conditions in said fiber optic cable.

16. The method of claim 12, further comprising step for determining different

5   portions of the fiber optic cable based on different return times of said reflection signal.

17. The method of claim 16, further comprising step for determining said temperature condition in each of said different portions of the fiber optic cable based on at least one of a threshold value and comparison signal corresponding to each of said different portions of the fiber optic cable.

10   18. The method of claim 17, further comprising step for adjusting each of said corresponding at least one of said threshold value and comparison signal to detect different temperature conditions among said different portions of the fiber optic cable.

19. The method of claim 12, further comprising step for determining said location by determining at least one of a location relative to an overall length of the fiber optic cable, and

15   an absolute distance from one end of the fiber optic cable.

20. The method of claim 12, further comprising step for determining at least one of a temperature duration and a temperature progression of said temperature condition over a predetermined time interval.

21. The method of claim 12, further comprising step for generating a signal to initiate

20   at least one of an alarm, a safety measure and a corrective measure.

22. The method of claim 12, further comprising:

step for correlating said location of the temperature condition along said fiber optic cable with a spatial location of an area occupied by said fiber optic cable; and

step for displaying on a display the spatial location of the area occupied by said fiber

25   optic cable.

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